

[INCH-POUND]  
A-A-59548  
19 April 2000

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SUPERSEDING  
MIL-S-44163B  
27 January 1989

## COMMERCIAL ITEM DESCRIPTION

### SHIRT, COLD WEATHER, SYNTHETIC FLEECE

The General Services Administration has authorized the use of this commercial item description as a replacement for Shirt, Cold Weather, Synthetic Fiber Pile of MIL-S-44163B for all Federal agencies.

#### 1. SCOPE

1.1 Scope. This commercial item description covers the requirements for a synthetic fleece shirt used as an insulation component of the Extended Cold Weather Clothing System (ECWCS). The shirt is a modified commercial item since it requires a specific military appearance (See paragraph 3.2).

2. CLASSIFICATION. The shirt shall be of one type in the following sizes as specified:

#### SCHEDULE OF SIZES

X-Small	Small	Medium	Large	X-Large
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Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP-COCT, 700 Robbins Avenue, Philadelphia, PA 19111-5092.
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AMSC N/A

FSC 8415

A-A-59548

### 3. SALIENT CHARACTERISTICS

3.1 Design and construction. The shirt has a center front opening with a two way slide fastener closure backed by a wind protection flap. It also has a collar; raglan sleeves with underarm slide fastener openings and a wrist tab with hook and loop adjustments; two internal upper chest pockets; two lower hand warmer pockets with slide fastener openings lined with ThermaStat®, or equal; and nylon reinforcements at the upper back, shoulders, upper chest and elbows. Nylon/lycra binding is used on the edges of the wind flap and bottoms of the sleeves. The shirt bottom is faced with a nylon binding that covers an elastic cord and has cord lock adjustments at each side seam. All slide fasteners have a thong for ease of opening when wearing gloves (reference figure 1). This design provides a garment that is light in weight, low in bulk, has environmental protection, and comfort in movement.

3.2 Basic material. The following material shall be used to provide the environmental protection, user comfort; light weight and durability needed for wear in field, combat, and operations other than war. The basic material for the shirt shall be 100% polyester circular knit terry, double-sided, heavy weight velour Polartec300 Style 7587® pile or equal. The fabric used may contain a minimum of 75% recycled polyester. The fabric shall be black in color. The material provides the required military appearance and functionality required by the military. The fabric shall conform to the following requirements:

CHARACTERISTIC	REQUIREMENT	TEST METHOD
Weight (oz. per square yard)	10.0 ± 0.5	ASTM D3776
Wales & Courses -Avg.	30Wales & 32Courses	ASTM D 3887
Thickness @ 0.6psi	0.135 minimum	ASTM D1777
Air Permeability, CFM	240 maximum	ASTM D737
Colorfastness: Laundering Crocking Light Carbon Arc Xenon	Excellent Dry - 4.0 / Wet 4.0  20 & 40 Hrs. – Excellent 4-5 85 & 170 Kj. – Excellent 4-5	AATCC TM 61- Option 2a, 3 cycles AATCC TM 8 AATCC TM 16 Option A and Option E
Dimensional Stability – Avg.	Wales: 3.0% max. Courses: 3.0% max.	AATCC TM 135 – 3 cycles, IIIA

3.2.1 Internal pocket material. The material for the internal chest pockets shall be a warp knit tricot mesh of 100% CoolMax® polyester or equal. The color shall be black. The fabric shall conform to the following requirements:

A-A-59548

CHARACTERISTIC	REQUIREMENT	TEST METHOD
Weight (oz. per square yard)	2.0 ± 0.2	ASTM D3776
Colorfastness:		
Laundering	Class 4, minimum	AATCC 61, IIA
Crocking	Class 4, minimum	AATCC 8
Perspiration	Class 4, minimum	AATCC 15
Light	Class 4, minimum, after 40 hrs.	AATCC 16E
Dimensional Stability – Ave.	5.0% X 5.0 % max.	AATCC 135, IIIA

3.2.2 Lower pocket lining. The material for the lower pocket lining shall be a brushed tricot of 100% ThermaStat ® polyester or equal. The color shall be black. The fabric shall conform to the following requirements:

CHARACTERISTIC	REQUIREMENT	TEST METHOD
Weight (oz. per square yard)	3.3 ± 0.2	ASTM D3776
Colorfastness:		
Laundering	Class 4, minimum	AATCC 61, IIA
Crocking	Class 4, minimum	AATCC 8
Perspiration	Class 4, minimum	AATCC 15
Light	Class 4, minimum, after 40 hrs.	AATCC 16E
Dimensional Stability – Ave.	5.0% X 5.0 % max.	AATCC 135, IIIA

3.2.3 Thread. Thread for needle and bobbin (looper) shall be commercial 100% textured polyester thread, size B, 2 or 3 ply conforming to type I, class 1, subclass B of A-A-52095 or cotton covered polyester core thread size 35/2 or 3 ply conforming to A-A-50199. All thread shall be non-staining and show good colorfastness to laundering. The thread color shall approximately match the basic material.

3.2.4 Labels. Each shirt shall have a commercial size label, an identification label, and a care label. The size and identification labels may be combined. The identification label shall contain the item description, contract number, fiber content information and the contractor's name. The size label color shall be white. The inscription shall have a minimum font size of 10 points. The inscription legibility, label, and label attachment shall last the expected life of the shirt. If available, a basic material supplier care label and hang tag may be used, except the care label information shall be as stated in paragraph 3.2.4.1.

A-A-59548

3.2.4.1 Care Label. The care label shall include the following information:

**Cold/Wash Warm  
Tumble Dry Low  
or Line Dry  
DO NOT USE BLEACH  
DO NOT IRON**

3.2.4.2 Size label. The size label shall contain, as a minimum, the following information, as applicable:

<u>X-Small</u> Chest – under 33 inches NSN: 8415-01-472-3526	<u>Small</u> Chest – 33-37 inches NSN: 8415-01-461-8336	<u>Medium</u> Chest – 37-41 inches NSN: 8415-01-461-8337
<u>Large</u> Chest – 41-45 inches NSN: 8415-01-461-8341	<u>X-Large</u> Chest – over 45 inches NSN: 8415-01-461-8356	

3.2.4.3 Label/tag. Each shirt shall have a bar-code label affixed as specified in the contract. The barcode label shall be clearly legible and readable by a scanner as well as human readable. The bar coding element shall be a 13 digit national stock number (NSN). The label shall comply with the DOD LOGMARS symbology. It must be located so that it is completely visible when the shirt is folded and/or packaged and shall cause no damage to the item.

3.2.4.4 Label placement. The labels shall be securely attached to the shirt and positioned as follows:

(1) Care label. On right chest mesh pocket and stitched on all four sides.

(2) Identification/Size label. On inside center back ( $\pm$  1 inch off center) and caught in collar setting seam.

3.2.5 Slide fasteners.

3.2.5.1 Center front slide fastener. The center front closure shall use an individual element molded fastener with double sliders, size 5-7 with a minimum crosswise breaking strength of 130 lbs., 9/16 inch wide tape, black in color, conforming to type IV, style 6 of A-A-55634. The lengths for the front opening shall be as follows:

A-A-59548

<u>Size</u>	<u>Inches</u>
X-Small	27
Small	28
Medium	29
Large	30
X-Large	31

3.2.5.2 Underarm and pocket opening slide fasteners. The slide fasteners for the underarm openings shall be a preassembled continuous element polyester monofilament. The slide fasteners for the lower front pockets shall be a continuous element polyester monofilament. The slide fasteners shall be size 5-7 with a minimum crosswise breaking strength of 175 lbs., 5/8 inch wide tape, black in color, conforming to type I, style 7 of A-A-55634. The sliders shall have an opening large enough to accommodate a 3/8 inch wide thong. The length needed for the underarm opening is 14 inches and the length for the pocket openings is 9 1/2 inches. The finished front pocket opening shall be 6 3/4 inches  $\pm$  1/4 inches.

3.2.5.3 Slide fastener thongs. The thongs for all slide fasteners shall be a 1/8 inch diameter black nonelastic nylon cord. If available, thongs from the basic material supplier may be used on the front pocket slide fasteners.

3.2.6 Fastener Tape, Hook and Loop. The hook and loop fastener tapes for the sleeve closure shall be 1 inch wide, black in color and conform to type II, class 1 of A-A-55126. The hook tape shall be 1-1/2  $\pm$  1/4 inches in length and the loop tape shall be 4  $\pm$  1/4 inches in length.

3.2.7 Drawcord. The elastic drawcord at the shirt bottom shall be 1/8 inch in diameter and conform to type II of MIL-C-43701. The lengths required are as follows:

<u>Size</u>	<u>Inches</u>
X-Small	52
Small	56
Medium	60
Large	64
X-Large	68

3.2.8 Webbing, Elastic. The elastic webbing for the mesh pocket opening shall be 3/4 inch wide and black in color. The lengths required are as follows:

<u>Size</u>	<u>Inches</u>
X-Small	7 3/4
Small	8 1/2
Medium	9 1/4
Large	10
X-Large	11

A-A-59548

3.2.9 Hanger Tape and Cord lock tape. The tape for the hanger loop and cord lock attachment shall be flat nylon, black, 3/8 inch in width and conform to the type 3, class 2 requirements of MIL-T-5038. Cut the hanger tape  $6 \pm 1/4$  inches for all sizes and the cord lock tape  $4 \pm 1/4$  inches for all sizes.

3.2.10 Barrel Lock. The barrel locks for the bottom drawcord shall be black, toaster ellipse conforming to ITW NEXUS part # 350-2000 or equal.

3.2.11 Binding. The binding for sleeve bottom and wind flap shall be a tricot knit weighing  $4.1 \pm 0.2$  oz. per sq. yd. with a fiber blend of 90% nylon and 10% lycra, slit into a 1-1/2 inch wide binding strip.

3.2.12. Grommet. The grommet used for the waist tunnel elastic cord shall conform to type I, class 3, size 0 of NASM-16491 and shall be black in color.

3.3 Patterns. The government shall furnish a complete set of patterns or a master pattern with grade rules, to maintain uniformity and consistency in manufacturing. The government patterns shall be used to create the contractor's working patterns. Minor modifications are permitted to accommodate manufacturing procedures, however the design and finished measurements shall be maintained.

**TABLE I. List of pattern parts.**

<b>Pattern Abbreviation</b>	<b>Nomenclature</b>	<b>Cut Parts</b>
<u>Fleece:</u> FRONT BACK COLLAR SLEEVE FRT UND FLP	Front Back Collar Sleeve Wind Flap	2 1 2 2 1
<u>Nylon Taslan:</u> ELBOW PATCH FRONT YOKE BACK YOKE SLEEVE YOKE SLEEVE TAB SLEEVE GSST BOTTOM TNNL	Elbow Patch Front Yoke Back Yoke Sleeve Yoke Sleeve Tab Sleeve Gusset Bottom Tunnel	2 2 1 2 2 2 1
<u>Mesh:</u> INS BRS PKT	Inside Breast pocket	2
<u>Knit Coolmax:</u> LOWER POCKET	Lower pocket	2

3.4 Configuration. The following specifics are needed to provide uniform appearance; comfort and durability in use during field duties, combat, and operations other than war. End item garment construction and appearance shall conform to figure 1 and the finished dimensions (See 5.5) to maintain end item configuration.

A-A-59548

3.4.1 Seaming. The seams shall be consistent, exhibit a uniform appearance and conform to the ASTM D-6193 Stitch Types listed in the table below. The backside of all seams (inside garment) shall be overlocked.

All bartacks, shall be 3/8 to 5/8 inch in length with approximately 27 stitches.

All material edges shall not ravel; Edges may be either turned-in, turned-under, serged or seared to prevent raveling.

Seaming Areas	Seam type	Gage	Stitch Type
Overedging and joining sleeve gusset	EFd-1		504
Attach care label to mesh pocket	EFf-1	1/16 to 1/8 inch from edges	301
Joining seams, i.e. side seams, sleeve seams, collar joining, pocket attachment, etc.	SSa-1	1/2 inch	301
Welt pocket openings	LSdu-2 and LSd-1	Top stitch 1/8 to 3/8 inch from folded edge of welt opening	301
Attachment of sleeve patches and yoke pieces	LSd-1	Top stitch 1/16 to 1/8 inch from folded edge	301
Make sleeve tab	SSa-1 and SSe-1	1/16 to 1/8 inch from edges	301
Top stitching of sleeve setting seams	LSq-2	Two rows, one on each side of sleeve setting seam, 1/4 inch from sleeve seam.	301
Set center front and underarm slide fasteners and top stitch	Lsbu-2	Top stitching gage – 1/4 inch from folded edge of slide fastener opening	301
Attach binding tape to wind flap and sleeve bottoms	BSc-1	1/16 to 1/8 inch from edge	301
Bottom tunnel attachment	EFb-1 and SSa-1	1/16 to 1/8 inch from edge	301

#### 4. REGULATORY REQUIREMENTS

4.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

#### 5. PRODUCT CONFORMANCE

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, and shall conform to the producer's own drawings, specifications, standards and quality assurance practices. The Government reserves the right to require proof of such conformance.

A-A-59548

5.2 Quality conformance inspection. Sampling for inspection shall be performed in accordance with ANZI/ASQC Z1.4, as defined by contract, except where otherwise indicated.

5.3 Component and end item inspection. In accordance with 5.1, components and end items shall be tested in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable procurement documents. The government reserves the right to inspect all components and end items to determine conformance to requirements.

5.4. End item visual examination. The shirt shall be examined for the major defects listed below.

EXAMINATION	DEFECT
Material and workmanship	Component part omitted, distorted, full, tight, or twisted; any part of shirt caught in any unrelated stitching, the edge of any component part required to be forced out having folds of more than 1/8 inch
	Hole, cut, tear, smash, burn, drill hole, run, thin place, dye streak, color not as specified, misweave affecting appearance or serviceability
	Seam: puckered, distorted, pleated, wavy, twisted, irregular or open, loose or tight stitch tension, broken or missing thread or stitch, needle chew, visible mend, edge or raised stitching sewn too close to edge, resulting in damage to cloth, seam allowance not as specified, raw edge affecting appearance or serviceability
	Front yoke and lower pocket stitch lines more than 1/4 inch out of alignment.
	Length of fronts uneven by more than 1/4 inch at top or bottom when closed or fronts out of alignment, causing twist when closed.
	Collar uneven in length by 1/4 inch or more, collar curls, puckers, pleats, or twists.
	Grommets omitted, added, not securely caught in fabric, not specified type.
	Bartacks or backtacks missing, insecure, misplaced, not specified size, stitches loose or broken, bartack/backtack not serving intended purpose.
	Sleeves puckered or pleated; uneven in length more than 1/2 inch, poorly shaped, tabs not placed as specified, tab hook and sleeve loop tapes not aligned, causing bulge or twist when fastened.
Shade	Shade variation within a part or between parts Thread color not as specified.
Cleanness	Spot, stain, excessive thread ends not trimmed or removed, odor, affecting appearance or serviceability
Labels	Omitted, incorrect, illegible, not attached where specified; bar-codes omitted, not readable by scanner; human-readable interpretation (HRI) omitted or illegible; bar code not visible on folded, packaged item; bar code attachment causes damage to the item.
Packaging	Any shirt not packaged in accordance with the contract or purchase order



A-A-59548

5.5 Finished dimensions. The shirt shall conform to the dimensions listed in inches in the table below:

**Table of Finished Measurements**

<b>SIZE</b>	<b><u>X-Small</u></b>	<b><u>Small</u></b>	<b><u>Medium</u></b>	<b><u>Large</u></b>	<b><u>X-Large</u></b>	<b><u>Tolerance</u></b>
Half chest	21	23	25	27	29	$\pm 1/2$
Back length	27 1/4	28 1/4	29 1/4	30 1/4	31 1/4	$\pm 1/2$
Sleeve length	29 1/2	30 1/4	31	31 3/4	32 1/2	$\pm 1/2$
½ Bottom	21 3/4	23 3/4	25 3/4	27 3/4	29 3/4	$\pm 3/4$

Measurements should be taken as follows:

Half Chest - With front slide fastener and underarm slide fasteners closed, and the shirt laying flat and smooth, measure from folded edge to folded edge at base of armhole.

Sleeve Length – Fold sleeve along underarm seam, measure along outside fold of sleeve from collar seam to base of the sleeve binding.

Back Length – Measure from collar seam along center back to bottom edge of shirt.

Half Bottom – With front slide fastener and underarm slide fasteners closed, and the shirt laid flat and smooth, measure across bottom from folded edge to folded edge.

## 6. PACKAGING

6.1 Packaging. The packaging requirements shall be as specified in the contract or purchase order.

## 7. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory unless otherwise stated in the contract or purchase order.)

7.1 Intended use. The shirts are for wear by military personnel of the Department of Defense as an insulation layer of the Extended Cold Weather Clothing System in field, combat, and operations other than war.

A-A-59548

7.2 Acceptance criteria. Sampling for inspection shall be in accordance with ANZI/ASQC Z1.4. The end items shall be examined for visual defects listed in paragraph 5.4. The lot size shall be expressed in units of shirts. The sample unit shall be one shirt. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects. The end item shall be examined for dimensional conformance in accordance with paragraph 5.5. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in shirts. The sample unit shall be one shirt. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0. Requirements for this acceptance criteria shall be referenced in the contract or purchase order.

### 7.3 Government documents.

7.3.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

## SPECIFICATIONS

### MILITARY

MIL-T-5038	-	Tape, Textile, Nylon
MIL-C-43701	-	Cord, Elastic, Nylon
NASM-16491	-	Grommet, Metallic

### CIDS

A-A-52095	-	Thread, Polyester
A-A-55634	-	Fasteners, Slide
A-A-55126	-	Fastener Tape, Hook & Loop
A-A-50199	-	Thread, Cotton Covered, Polyester Core

Source of Government documents. Copies of Military and Federal documents are available from:

Standardization Documents Order Desk  
Bldg. 4D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094

7.3.2 Other Government documents, drawings, and publications. The following Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those specified in the solicitation.

Code of Federal Regulations

A-A-59548

(Applications for copies should be addressed to U.S. Government Printing Office, Superintendent of Documents, Mail stop: SSOP, Washington, DC 20402-9328.)

7.3.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issue of documents which are DOD adopted shall be those in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the documents cited in the solicitation.

ASTM D 3776 Standard Test Method for Mass Per Unit Area (Weight) of Fabric  
 ASTM D 1777 Standard Test Method for Thickness of Textile Materials  
 ASTM D737 Standard Test Method for Air Permeability of Textile Fabrics

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS

(Applications for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor, West Conshohocken, PA 19428-2959.)

AATCC TM 61 Colorfastness to Laundering, Home and Commercial: Accelerated  
 AATCC TM8 Colorfastness to Crocking: AATCC Crockmeter Method  
 AATCC 15 Colorfastness to Perspiration  
 AATCC TM16 Colorfastness to Light  
 AATCC TM 135 Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics

#### AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

(Applications for copies should be addressed to the American Association of Textile Chemists and Colorists, P.O. Box 12215, Triangle Park, NC 27709-2215.)

ANSI/ASCQ Z1.4- Sampling Procedures and Tables for Inspection of Attributes  
 (Applications for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018-3308.)

#### MILITARY INTERESTS:

Custodians  
 Army - GL  
 Navy - MC

CIVIL AGENCY COORDINATING  
 ACTIVITY:  
 GSA - FSS

PREPARING ACTIVITY:  
 DLA - CT  
 Project 8415-0193

A-A-59548

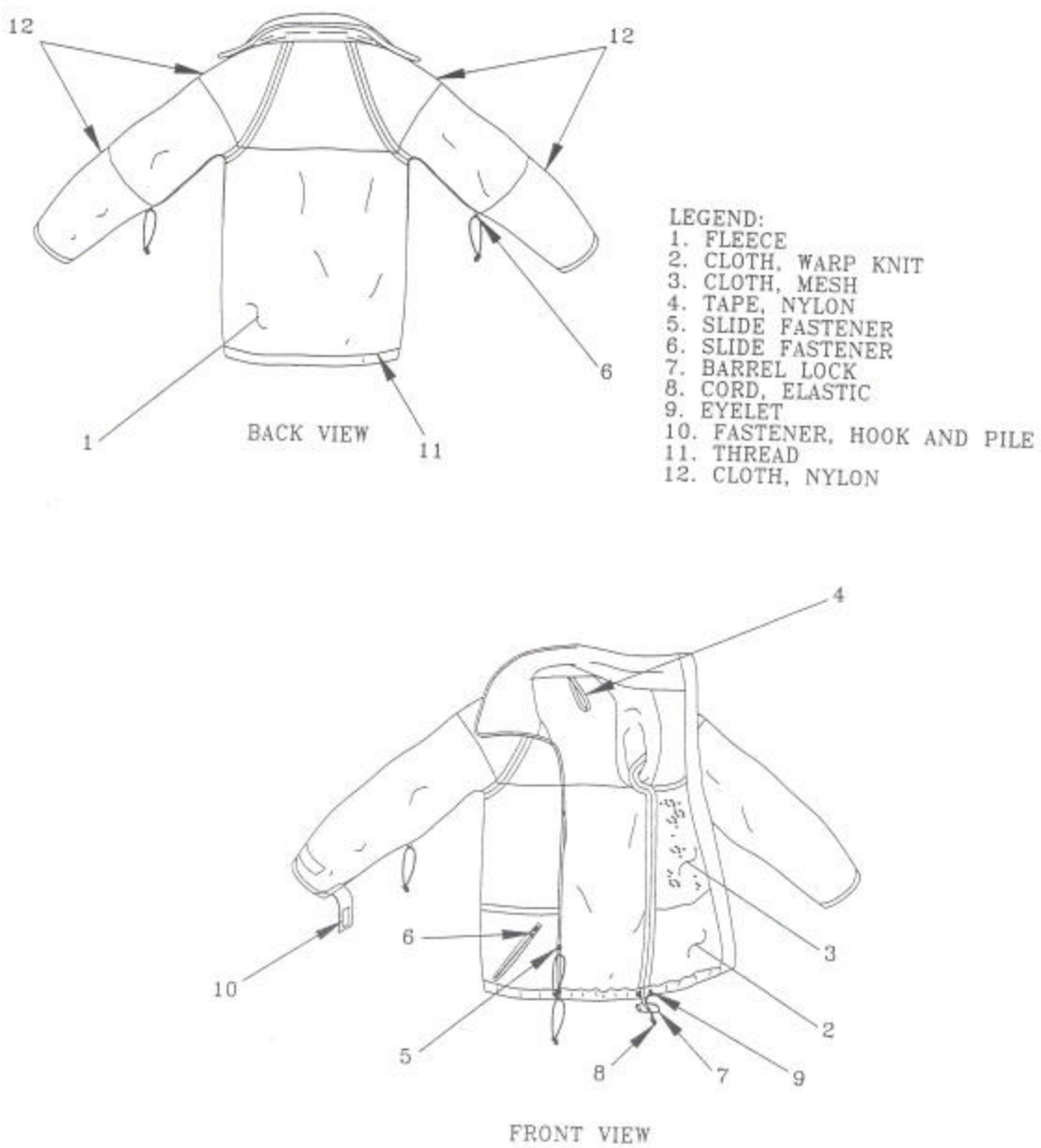


Figure 1

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7, and send to preparing activity.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

### I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER  
A-A-59548

2. DOCUMENT DATE (YYYYMMDD)  
20000419

3. DOCUMENT TITLE SHIRT, COLD WEATHER, SYNTHETIC FLEECE

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

### 5. REASON FOR RECOMMENDATION

### 6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)  
(1) Commercial  
(2) AUTOVON  
(if applicable)

7. DATE SUBMITTED  
(YYYYMMDD)

### 8. PREPARING ACTIVITY

a. NAME DEFENSE SUPPLY CENTER PHILADELPHIA

b. TELEPHONE (Include Area Code)  
(1) Commercial (215) 737-5866 (2) AUTOVON 444-5866

c. ADDRESS (Include Zip Code)  
DSCP-C, 700 ROBBINS AVENUE (BLDG. 6 C & T)  
PHILADELPHIA, PA 19111-5092

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Defense Standardization Program Office (DLSC-LM)  
8725 John J. Kingman road, Suite 2533, Ft. Belvoir, VA 22060-2533  
Telephone (703) 767-6888 AUTOVON 427-6888